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UTILITY PATENT APPLICATION TRANSMITTAL
(Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.
13185

Total Pages in this Submission

TO THE ASSISTANT COMMISSIONER FOR PATENTS
Box Patent Application
Washington, D.C. 20231

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for the invention entitled:

SELECTIVE CALLING RECEIVER AND METHOD OF SWITCHING ALERT OPERATION THEREOF

and invented by:

Sadayuki Amma

If a CONTINUATION APPLICATION, *check appropriate box and supply the requisite information:*

☐ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Which is a:

☐ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Which is a:

☐ **Continuation** ☐ **Divisional** ☐ **Continuation-in-part (CIP)** of prior application No.: _____

Enclosed are:

Application Elements

1. ☒ Filing fee as calculated and transmitted as described below

2. ☒ Specification having 26 pages and including the following:

   a. ☒ Descriptive Title of the Invention

   b. ☐ Cross References to Related Applications *(if applicable)*

   c. ☐ Statement Regarding Federally-sponsored Research/Development *(if applicable)*

   d. ☐ Reference to Microfiche Appendix *(if applicable)*

   e. ☒ Background of the Invention

   f. ☒ Brief Summary of the Invention

   g. ☒ Brief Description of the Drawings *(if drawings filed)*

   h. ☒ Detailed Description

   i. ☒ Claim(s) as Classified Below

   j. ☒ Abstract of the Disclosure

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Application Elements (Continued)

3. ☒ Drawing(s) *(when necessary as prescribed by 35 USC 113)*
   a. ☒ Formal Number of Sheets 12
   b. ☐ Informal Number of Sheets
4. ☒ Oath or Declaration
   a. ☒ Newly executed *(original or copy)* ☐ Unexecuted
   b. ☐ Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional application only)*
   c. ☒ With Power of Attorney ☐ Without Power of Attorney
   d. ☐ *DELETION OF INVENTOR(S)*
   Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference *(usable if Box 4b is checked)*
   The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ Computer Program in Microfiche *(Appendix)*
7. ☐ Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all must be included)*
   a. ☐ Paper Copy
   b. ☐ Computer Readable Copy *(identical to computer copy)*
   c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

Accompanying Application Parts

8. ☒ Assignment Papers *(cover sheet & document(s))*
9. ☐ 37 CFR 3.73(B) Statement *(when there is an assignee)*
10. ☐ English Translation Document *(if applicable)*
11. ☒ Information Disclosure Statement/PTO-1449 ☒ Copies of IDS Citations
12. ☐ Preliminary Amendment
13. ☒ Acknowledgment postcard
14. ☒ Certificate of Mailing
    ☐ First Class ☒ Express Mail *(Specify Label No.):* EM169955209US

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Accompanying Application Parts (Continued)

15. ☒ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*

16. ☐ Additional Enclosures *(please identify below):*

Fee Calculation and Transmittal

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	10	- 20 =	0	x $18.00	$0.00
Indep. Claims	2	- 3 =	0	x $78.00	$0.00
Multiple Dependent Claims (check if applicable) ☐					$0.00
				BASIC FEE	$760.00
OTHER FEE *(specify purpose)*		**Assignment recordal fee**			$40.00
				TOTAL FILING FEE	$800.00

☒ A check in the amount of **$800.00** to cover the filing fee is enclosed.

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- ☒ Credit any overpayment.
- ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Signature

Dated: **November 17, 1999**

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cc:

SELECTIVE CALLING RECEIVER AND METHOD OF SWITCHING ALERT OPERATION THEREOF

BACKGROUND OF THE INVENTION

Field of the Invention:

The present invention relates to a selective calling receiver and, more particularly, to a selective calling receiver which allows a user to grasp the degree of emergency of a call with only the auditory sense and a method of switching the alert operation of the receiver.

Description of the Prior Art:

Radio selective calling receivers are currently widely used as media for providing messages addressed to persons and information messages (e.g., stock prices).

The user of a radio selective calling receiver (selective calling receiver) is notified of reception of an incoming message addressed to the person by a alert means such as sound generation by a loudspeaker or vibration by a vibrator. The user recognizes the reception and then externally operates the receiver to stop the alert operation.

As a known technique associated with the present invention, Japanese Patent No. 2643619 discloses a technique associated with a radio selective calling receiver having an auto-reset function.

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Fig. 1 is a block diagram of this radio selective calling receiver. A radio signal received by an antenna 201 is amplified and demodulated by a radio section 202. The demodulated radio signal is shaped by a waveform generation circuit 203 into a waveform that can be read by a decoder 204, and output as a shaped radio signal.

A quartz oscillator 205 generates a reference clock. The shaped radio signal is synchronized with the generated reference clock. The decoder 204 compares an ID number contained in the synchronized radio signal with its own ID number stored in a memory section 206.

When it is determined by comparison that the two numbers match, the quartz oscillator 205 notifies an alert function control section 207 of it. The alert function control section 207 is connected to an auto-reset timer 208, mode change-over switch 209, reset switch 210, and auto-reset setting switch 211.

The auto-reset timer 208 counts a predetermined time. The mode change-over switch 209 switches between the auto-reset state and manual reset state of the alert function. The reset switch 210 performs manual reset. The auto-reset setting switch 211 selects one of the alert functions related to reception, i.e., sound generation, vibration, and light emission, which is automatically reset in setting manual reset, and sets the function.

The alert function control section 207 notifies the user of an incoming call in response to an alert from the decoder 204. As the alert means, one of a loudspeaker 213, LCD 215, vibration generation element 217, and light-emitting element 218 is set in advance.

Even when the various alert functions are switched to the manual reset state, this radio selective calling receiver automatically resets the alert function set by the auto-reset setting switch after the elapse of a predetermined time counted by the timer.

This radio selective calling receiver can prevent any wasteful current consumption. This receiver also alerts based on setting for continuously generating sound or based on setting for automatically resetting sound generation in accordance with the degree of emergency of a call.

However, the user cannot discriminate the sound pattern of alert based on setting for continuously generating sound from that of alert based on setting for automatically resetting sound generation. For this reason, the user must grasp the degree of emergency by confirming the displayed contents.

A demand has arisen for a selective calling receiver which allows the user to discriminate the sound pattern based on setting for continuous sound generation from that

based on setting for automatically resetting sound generation and grasp the degree of emergency of a call.

SUMMARY OF THE INVENTION

The present invention has been made in consideration of the above situation to solve the above problem, and has as its object to provide a selective calling receiver which allows the user to grasp the degree of emergency of a call with only the auditory sense.

It is another object of the present invention to provide a selective calling receiver capable of selectively setting a sound pattern in accordance with the degree of emergency of a call on the basis of some degree of freedom.

It is still another object of the present invention to provide a selective calling receiver capable of easily switching between setting for continuous sound generation and setting for automatically resetting vibration by an external one-touch operation.

It is still another object of the present invention to provide a selective calling receiver capable of increasing the continuous sound generation time by reducing current consumption for continuous sound generation.

In order to achieve the above objects, according to the first main aspect of the present invention, there is

provided a selective calling receiver comprising a first table storing in advance setting information for automatically stopping sound generation and switching to another alert operation, a second table storing in advance setting information for continuous sound generation, and a control section for generating an alert instruction determined on the basis of one of the setting information stored in the first table and the setting information stored in the second table in response to a received radio signal containing an ID number.

The selective calling receiver of the first main aspect has the following subordinate aspects.

A sound pattern in automatic stop and that in continuous sound generation are different from each other.

The setting information stored in the first table contains a number corresponding to the ID number, an instruction for instructing whether sound generation is to be automatically stopped, an instruction for instructing whether the alert operation is to be switched to another alert operation, and an instruction for instructing the alert operation using sound generation.

The instruction for the alert operation using sound generation includes an instruction for a volume of sound, an instruction for a pattern of beep sound, an instruction for a pattern of melody sound, and an instruction for a

frequency of the sound.

The setting information stored in the second table contains an instruction for a type of sound set on the basis of current consumption of an alert section operated in response to the alert instruction, and an instruction for a volume of the sound.

The setting information stored in the second table contains an instruction for a frequency of sound, the frequency being selected from a plurality of frequencies set in advance, an instruction for a volume of the sound, the volumes being selected from a plurality of volumes set in advance, and an instruction for a type of the sound, the type being set on the basis of current consumption of an alert section operated in response to the alert instruction.

The receiver further comprises an external switch for switching the alert operation using sound generation based on the setting information in the second table to another alert operation based on the setting information in the first table.

Another alert operation is an alert operation using vibration.

In order to achieve the above objects, according to the second main aspect of the present invention, there is provided a method of switching an alert operation of a

selective calling receiver, comprising the steps of (a) looking up a first table which stores in advance setting information for automatically stopping sound generation and switching to another alert operation in response to a received radio signal containing an ID number, the setting information containing a number corresponding to the ID number and an instruction for instructing whether sound generation is to be automatically stopped, (b) when it is determined by looking up the first table that the instruction is an instruction for automatically stopping sound generation, generating an alert instruction determined on the basis of the setting information for automatically stopping sound generation, and (c) when it is determined by looking up the first table that the instruction is an instruction for inhibiting automatic stop of sound generation, looking up a second table which stores in advance setting information for continuously generating sound and generating an alert instruction determined on the basis of the setting information for continuously generating sound.

According to the present invention having the above aspects, the ring when the continuous sound generation operation is set can be discriminated from that when the A/R function is set. Hence, the user can accurately grasp the degree of emergency with the auditory sense.

In addition, since setting for continuous sound generation and that for auto-reset of vibration can be easily switched by an external operation, the user can pursue convenience.

Furthermore, when a sound pattern which shortens the operation time for continuous sound generation is employed, the operation time of the alert section can be reduced to suppress current consumption, and the continuous sound generation time can be prolonged.

The above and many other objects, features and advantages of the present invention will become manifest to those skilled in the art in the art upon making reference to the following detailed description and accompanying drawings in which preferred embodiments incorporating the principle of the present invention are shown by way of illustrative examples.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram showing the schematic arrangement of a conventional radio selective calling receiver;

Fig. 2 is a block diagram showing the schematic arrangement of a selective calling receiver according to the first embodiment of the present invention;

Fig. 3 is a block diagram showing the arrangement of the alert section of the selective calling receiver

according to the first embodiment of the present invention;

Fig. 4 is a view for explaining setting information stored in the first table in the first embodiment of the present invention;

Fig. 5 is a view for explaining setting information stored in the second table in the first embodiment of the present invention;

Fig. 6 is a flow chart for explaining the operation of the selective calling receiver according to the first embodiment of the present invention;

Figs. 7A and 7B are views for explaining the alert operation based on setting information for automatically stopping sound generation and that based on setting information for continuously generating sound, respectively;

Fig. 8 is a view for explaining the relationship between the operation and current consumption in the alert section of the selective calling receiver according to the first embodiment of the present invention;

Fig. 9 is a view for explaining sound patterns in the alert operation of the selective calling receiver according to the first embodiment of the present invention;

Fig. 10 is a block diagram showing the schematic

arrangement of a selective calling receiver according to the second embodiment of the present invention;

Fig. 11 is a view for explaining setting information stored in the second table in the second embodiment of the present invention;

Fig. 12 is a view for explaining the setting procedures of setting information stored in the second table in the second embodiment of the present invention; and

Fig. 13 is a block diagram showing the schematic arrangement of a selective calling receiver according to the third embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Preferred embodiments of the present invention will be described below with reference to the accompanying drawings.

A selective calling receiver according to the first embodiment of the present invention will be described with reference to the block diagram of Fig. 2.

A selective calling receiver (to be referred to as a receiver hereinafter) 101 has an antenna section 103, reception section 105, clock section 107, operation section 109, control section 111, display section 113, message memory section 115, program memory section 117, ID memory section 119, continuous sound generation data

setting section 121, alert data setting section 123, alert section 125, and power supply section 131.

In this embodiment, the alert data setting section 123 stores a first table 127 in advance (Fig. 4). The selective continuous sound data setting section 121' stores a second table 129 in advance (Fig. 5).

The program memory section 117 stores a control program for systematically controlling the operation of the receiver 101. The control section 111 executes the following operation on the basis of the control program. The power supply section 131 supplies power for operating the constituent elements of the receiver 101.

Fig. 3 is a block diagram showing details of the alert section 125. The alert section 125 has a melody section 125-1, sound generation driver section 125-2, loudspeaker section 125-3, vibration driver section 125-4, and vibration section 125-5.

Referring to Fig. 2, the reception section 105 amplifies and demodulates a radio signal (not shown) received via the antenna 103. The radio signal contains an ID number and a message. The control section 111 acquires the ID number on the basis of a clock signal (not shown) synchronized with the received radio signal.

The clock signal is generated by the clock section 107. The control section 111 compares the acquired ID

number with each of ID numbers stored in the ID memory section 119.

When it is determined by comparison that the acquired ID number coincides with one of the ID numbers stored in the ID memory section 119, the control section 111 looks up the first table 127 stored in the alert data setting section 123.

Fig. 4 shows the contents of setting information in the first table 127. The first table 127 includes setting information for controlling the alert section 125 in alert. Address ID information is a number (address ID) corresponding to the ID number contained in the received radio signal.

Automatic stop (auto-reset: to be referred to as A/R hereinafter) information is set as an instruction for instructing whether sound generation is to be automatically stopped. Vibration driver information is set as an instruction for instructing whether the alert means (the vibration driver section 125-4 and, more particularly, the vibration section 125-5) using vibration is to be driven.

Sound generation information is set as instructions for sound generation and type of sound. The instructions for type of sound include an instruction for a beep sound pattern, an instruction for a melody sound pattern, and an

instruction for the sound frequency.

The address ID information, A/R information, vibration driver information, and sound generation information of the first table 127 form setting information for automatically stopping sound generation.

Referring to Fig. 2, the control section 111 looks up the first table 127 and executes the alert operation based on the setting information containing the address ID corresponding to the ID number that coincides with one of the ID numbers.

When the A/R information is set at "ON" representing setting of the A/R function, the control section 111 generates a melody signal a, volume signal b, beep signal c, and vibration signal d shown in Fig. 3 as alert instructions on the basis of the sound generation information and vibration driver information.

When the A/R information is set at "OFF" representing that the A/R function is not actuated, the control section 111 looks up the second table 129 that stores setting information for continuous sound generation. The second table 129 is stored in the continuous sound generation data setting section 121.

Fig. 5 shows the contents of setting information of the second table 129. Sound type information is set on the basis of the current consumption of the alert section

125 in the receiver 101.

In the first embodiment, for the least current consumption (in the receiver 101, the operation time per period becomes shortest), a sound pattern "beep sound/pattern 4" is set. Sound volume information is set at "large".

Referring to Fig. 2, the control section 111 generates the melody signal a, volume signal b, and beep signal c shown in Fig. 3 as alert instructions on the basis of the setting information of the second table 129.

When the received radio signal contains a message, the control section 111 stores the message in the message memory 115 and also displays the message on the display section 113.

The user of the receiver 101 externally operates the operation section 109 to reset the alarm (sound generation or vibration), confirm the displayed contents, and set the setting information of the first and second tables 127 and 129.

The receiver 101 has the first table 127, second table 129, and control section 111. The first table 127 stores setting information for automatically stopping sound generation in advance. The second table 129 stores setting information for continuously generating sound in advance.

The control section 111 generates an alert instruction in response to the received radio signal containing the ID number. The alert instruction is determined on the basis of the setting information stored in the first table 127 in advance and the setting information stored in the second table 129 in advance.

On the basis of the setting information set together with the address ID set in the first table 127, the control section 111 determines whether the alert operation is to be automatically stopped or continued and generates a corresponding alert instruction. The ID number in the received radio signal corresponds to the address ID set in the first table 127.

As for the sound generated on the basis of the alert operation, the sound pattern in automatically stopping sound generation is different from that in continuous sound generation. The sound pattern corresponds to the frequency and type of sound.

Fig. 6 is a flow chart showing the operation of the receiver 101. In step S501, whether the alert form is to be set is selected. If the alert form is set (step S502), whether the alert form using the A/R function is to be set is selected.

If the alert form using the A/R function is not selected (a function of continuously generating sound is

selected), setting information (beep sound/pattern 4) based on Fig. 5 is selected (step S503).

After step S503, when the receiver receives a call in the stand-by state (step S504) (YES in step S505), it continuously executes alert operation in accordance with the alert instruction determined on the basis of the sound pattern (beep sound/pattern 4) until the alert operation is reset by the user through the operation section 109 (step S506).

Processing executed when the alert form is not selected (NO in step S501), and the alert form using the A/R function is set (YES in step S507) will be described.

In this case, setting information for automatically stopping sound generation is set in advance (step S508). The alert operation is executed in response to the alert instruction determined on the basis of setting information for automatically stopping sound generation after the stand-by state. The alert operation is stopped by the user's reset operation or after the elapse of the automatic stop time (step S509).

Fig. 7A shows the alert operation executed on the basis of the setting information for automatically stopping sound generation. Fig. 7B shows the alert operation executed on the basis of the setting information for continuous sound generation.

The current consumption of the alert section 125 during the alert operation will be described with reference to Fig. 8. Fig. 8 shows the current consumption for each sound pattern.

The current consumption when the alert operation is executed on the basis of the setting information shown in Fig. 5 is shown in the diagram of Fig. 8. The current consumption becomes low in the order of alert using vibration - alert using a melody - alert using beep sound.

Fig. 9 shows the waveform of each sound pattern of beep sound. When a sound pattern with a short operation time is employed as a sound pattern for continuous sound generation, the operation time of the alert section 125 can be shortened (i.e., the current consumption is reduced). As a result, the continuous sound generation time can be made long.

In the receiver of the present invention, since the user is notified of a call using a dedicated pattern of beep sound, he/she can clearly grasp the degree of emergency of the call with the auditory sense. When a dedicated pattern of beep sound with the least current consumption is employed for alert using continuous sound generation, the sound generation alert time in continuous sound generation can be prolonged.

Fig. 10 is a block diagram of a selective calling

receiver according to the second embodiment of the present invention. The same reference numerals as in the first embodiment denote the same constituent elements in the second embodiment, and a detailed description thereof will be omitted.

A selective calling receiver (to be referred to as a receiver hereinafter) 101-2 according to the second embodiment selectively sets the frequency and volume of sound in setting information for continuous sound generation. This receiver 101-2 has a selective continuous sound generation data setting section 121' in place of the continuous sound generation data setting section 121 of the above-described first embodiment.

The selective continuous sound generation data setting section 121' has a second table 129'. Fig. 11 shows setting information in the second table 129'. The frequency of beep sound and the volume of sound are selected from a plurality of frequencies and volumes set in advance, respectively.

As shown in Fig. 11, in the second embodiment, the frequency of beep sound is set at "2,660 Hz", and the volume of sound is set at "large". The user can change the settings by externally inputting them from an operation section 109 while listening to sound from an alert section 125 (loudspeaker section).

Fig. 12 shows the setting procedures of setting information in the second table 129'. First, when the "MENU" key of the operation section 109 is pressed in the reception stand-by state, the menu window is displayed (step S101).

"Sound" is selected with the selection key of the operation section 109, and the OK key is pressed (step S102). Next, "continuous sound generation" is selected with the selection key of the operation section 109, and the OK key is pressed (step S103).

While listening to the sound generated from a loudspeaker section 125-3, "2,660 Hz" is selected with the selection key of the operation section 109, and the OK key is pressed (step S104).

Finally, while listening to the sound generated from the loudspeaker section 125-3, "large" is selected with the selection key of the operation section 109 for the volume of sound, and the OK key is pressed (step S105). With the above procedures, the user can set alert using continuous sound generation that is easier to understand.

Fig. 13 is a block diagram showing of a selective calling receiver according to the third embodiment of the present invention. The same reference numerals as in the first embodiment denote the same constituent elements in the third embodiment, and a detailed description thereof

will be omitted.

The selective calling receiver (to be referred to as a receiver hereinafter) 101-3 according to the third embodiment has a means for switching between setting for automatically stopping vibration and setting for continuous sound generation by a one-touch operation. The receiver 101-3 has an external switch section 133 in addition to the arrangement of the above-described first embodiment.

When the external switch section 133 is set at an alert operation using vibration (01), the A/R information (Fig. 4) is switched to "ON" even when a first table 127 has setting information for continuously generating sound, and the alert operation using vibration is executed.

When the external switch section 133 is returned to setting for the alert operation using sound (02), the setting is switched to the alert operation using continuous sound generation.

The third embodiment allows switching between the alert operation using vibration based on setting information with A/R information "ON" in the first table 127 and that using sound based on setting information in a second table 129 in response to an external input operation.

The user can instantaneously select an alert

operation according to the situation, resulting in convenience.

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WHAT IS CLAIMED IS:

1. A selective calling receiver comprising:

a first table storing in advance setting information for automatically stopping sound generation and switching to another alert operation;

a second table storing in advance setting information for continuous sound generation; and

a control section for generating an alert instruction determined on the basis of one of the setting information stored in the first table and the setting information stored in the second table in response to a received radio signal containing an ID number.

2. A receiver according to claim 1, wherein

a sound pattern in automatic stop and that in continuous sound generation are different from each other.

3. A receiver according to claim 1, wherein

the setting information stored in the first table contains

a number corresponding to the ID number,

an instruction for instructing whether sound generation is to be automatically stopped,

an instruction for instructing whether the alert operation is to be switched to another alert operation, and

an instruction for instructing the alert operation

using sound generation.

4. A receiver according to claim 3, wherein

the instruction for the alert operation using sound generation includes

an instruction for a volume of sound,

an instruction for a pattern of beep sound,

an instruction for a pattern of melody sound, and

an instruction for a frequency of the sound.

5. A receiver according to claim 1, wherein

the setting information stored in the second table contains

an instruction for a type of sound set on the basis of current consumption of an alert section operated in response to the alert instruction, and

an instruction for a volume of the sound.

6. A receiver according to claim 1, wherein

the setting information stored in the second table contains

an instruction for a frequency of sound, the frequency being selected from a plurality of frequencies set in advance,

an instruction for a volume of the sound, the volumes being selected from a plurality of volumes set in advance, and

an instruction for a type of the sound, the type

being set on the basis of current consumption of an alert section operated in response to the alert instruction.

7. A receiver according to claim 3, wherein

another alert operation is an alert operation using vibration.

8. A receiver according to claim 1, wherein

said receiver further comprises an external switch for switching the alert operation using sound generation based on the setting information in the second table to another alert operation based on the setting information in the first table.

9. A receiver according to claim 8, wherein

another alert operation is an alert operation using vibration.

10. A method of switching an alert operation of a selective calling receiver, comprising the steps of:

(a) looking up a first table which stores in advance setting information for automatically stopping sound generation and switching to another alert operation in response to a received radio signal containing an ID number, the setting information containing a number corresponding to the ID number and an instruction for instructing whether sound generation is to be automatically stopped;

(b) when it is determined by looking up the first

table that the instruction is an instruction for automatically stopping sound generation, generating an alert instruction determined on the basis of the setting information for automatically stopping sound generation; and

(c) when it is determined by looking up the first table that the instruction is an instruction for inhibiting automatic stop of sound generation, looking up a second table which stores in advance setting information for continuously generating sound and generating an alert instruction determined on the basis of the setting information for continuously generating sound.

ABSTRACT OF THE DISCLOSURE

A selective calling receiver includes first and second tables and a control section. The first table stores in advance setting information for automatically stopping sound generation and switching to another alert operation. The second table stores in advance setting information for continuous sound generation. The control section generates an alert instruction determined on the basis of the setting information stored in the first table or that stored in the second table in response to a received radio signal containing an ID number. A method of switching the alert operation of the receiver is also disclosed.

FIG.1
PRIOR ART

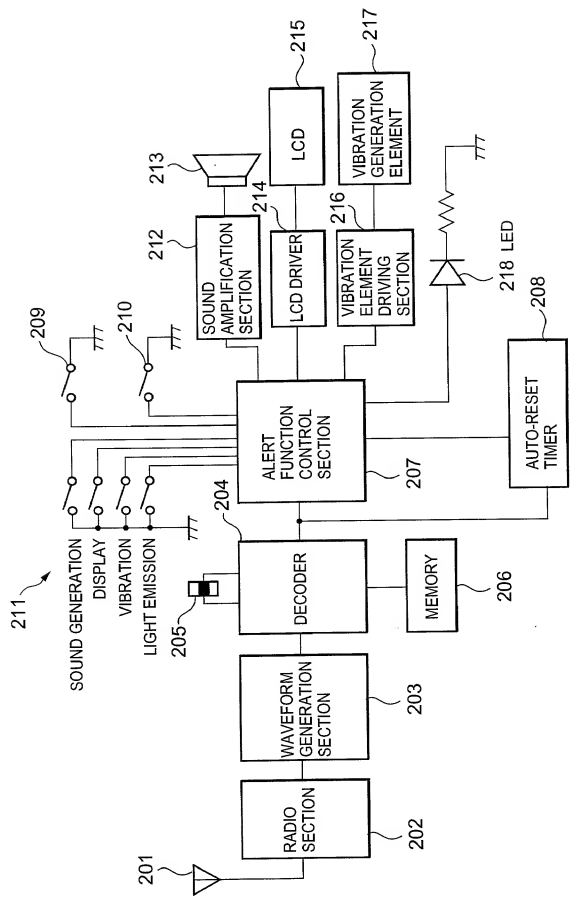


FIG.2

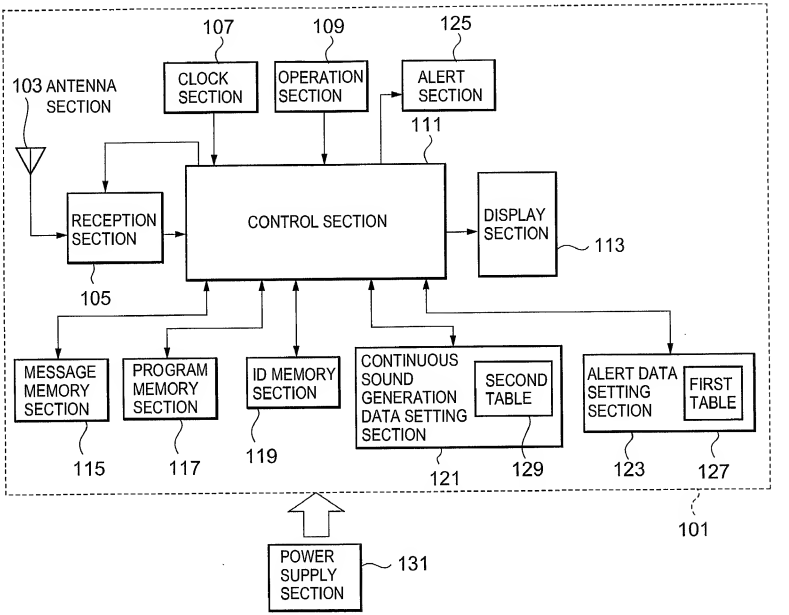

107
109
125
CLOCK SECTION
OPERATION SECTION
ALERT SECTION
103 ANTENNA SECTION
111
RECEPTION SECTION
CONTROL SECTION
DISPLAY SECTION
113
105
MESSAGE MEMORY SECTION
PROGRAM MEMORY SECTION
ID MEMORY SECTION
CONTINUOUS SOUND GENERATION DATA SETTING SECTION
SECOND TABLE
ALERT DATA SETTING SECTION
FIRST TABLE
115
117
119
121
129
123
127
101
POWER SUPPLY SECTION
131

FIG.3

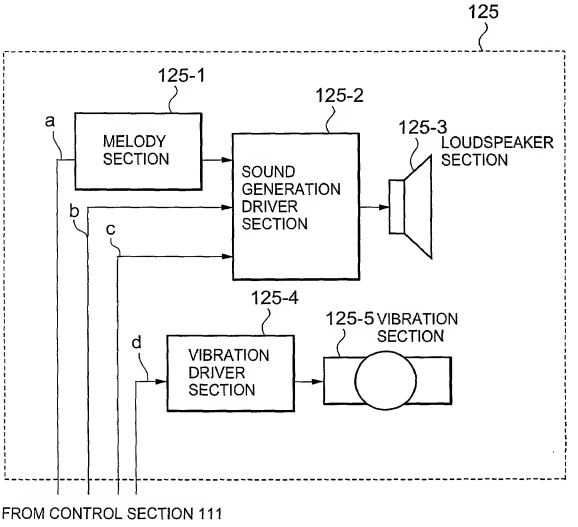

125
125-1
125-2
125-3
a
MELODY SECTION
SOUND GENERATION DRIVER SECTION
LOUDSPEAKER SECTION
b
c
125-4
125-5 VIBRATION SECTION
d
VIBRATION DRIVER SECTION
FROM CONTROL SECTION 111

FIG.4

ADDRESS ID INFORMATION	A/R INFORMATION	OPERATION INFORMATION OF VIBRATION DRIVER SECTION	SOUND GENERATION INFORMATION (SOUND VOLUME,SOUND TYPE)

FIG.5

SOUND TYPE INFORMATION: BEEP SOUND PATTERN 4	SOUND VOLUME INFORMATION: LARGE

FIG.6

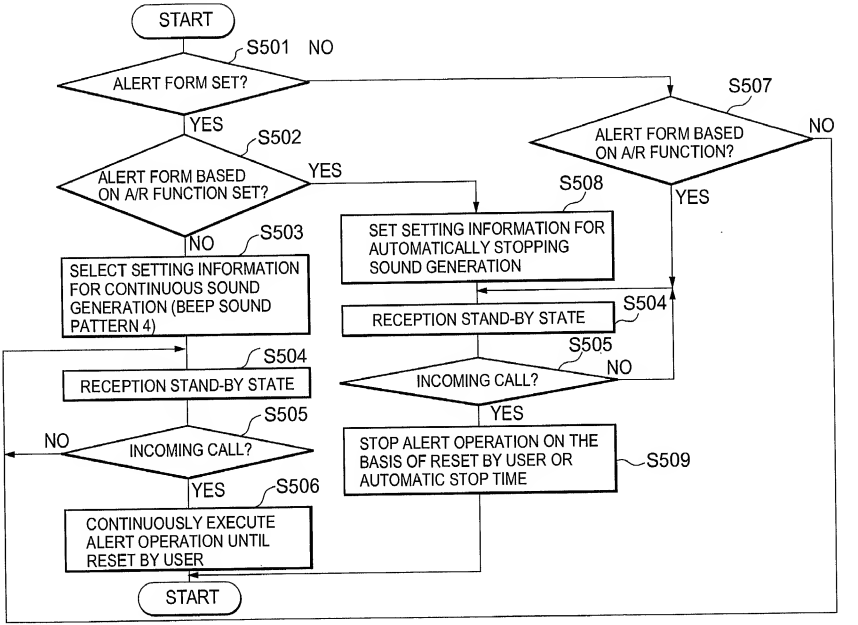

START
S501
NO
ALERT FORM SET?
YES
S502
ALERT FORM BASED ON A/R FUNCTION SET?
YES
NO
S503
SELECT SETTING INFORMATION FOR CONTINUOUS SOUND GENERATION (BEEP SOUND PATTERN 4)
S504
RECEPTION STAND-BY STATE
S505
NO
INCOMING CALL?
YES
S506
CONTINUOUSLY EXECUTE ALERT OPERATION UNTIL RESET BY USER
START
S507
ALERT FORM BASED ON A/R FUNCTION?
NO
YES
S508
SET SETTING INFORMATION FOR AUTOMATICALLY STOPPING SOUND GENERATION
S504
RECEPTION STAND-BY STATE
S505
NO
INCOMING CALL?
YES
STOP ALERT OPERATION ON THE BASIS OF RESET BY USER OR AUTOMATIC STOP TIME
S509

FIG.7A

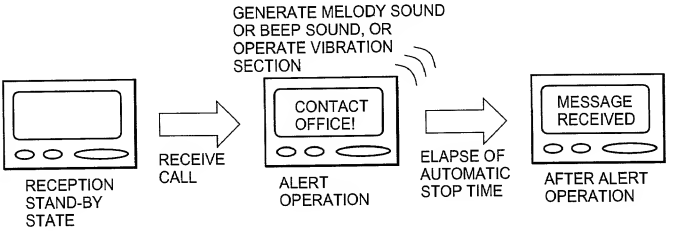

GENERATE MELODY SOUND OR BEEP SOUND, OR OPERATE VIBRATION SECTION
CONTACT OFFICE!
MESSAGE RECEIVED
RECEPTION STAND-BY STATE
RECEIVE CALL
ALERT OPERATION
ELAPSE OF AUTOMATIC STOP TIME
AFTER ALERT OPERATION

FIG.7B

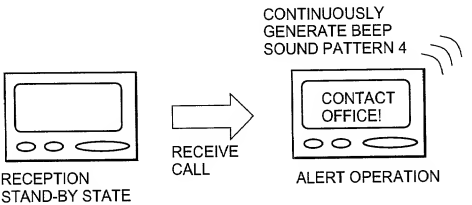
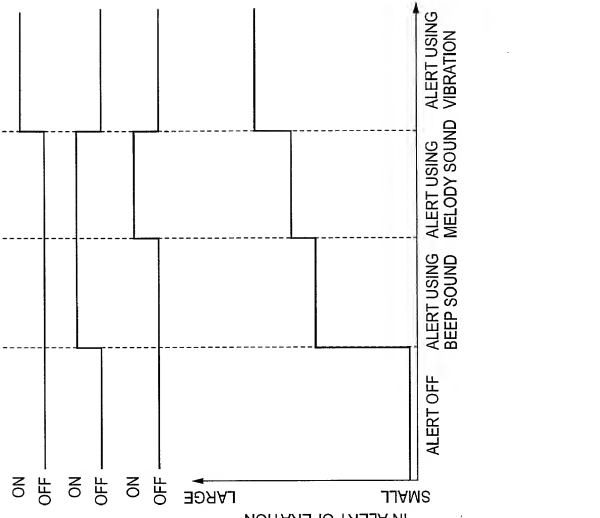

CONTINUOUSLY GENERATE BEEP SOUND PATTERN 4
CONTACT OFFICE!
RECEPTION STAND-BY STATE
RECEIVE CALL
ALERT OPERATION

FIG.8


OPERATION OF VIBRATION DRIVER SECTION 125-4
OPERATION OF SOUND GENERATION DRIVER SECTION 125-2
OPERATION OF MELODY SECTION 125-1
ON
OFF
ON
OFF
ON
OFF
CURRENT CONSUMPTION IN ALERT OPERATION
LARGE
SMALL
ALERT OFF
ALERT USING BEEP SOUND
ALERT USING MELODY SOUND
ALERT USING VIBRATION

09h:23e1.1179

FIG.9

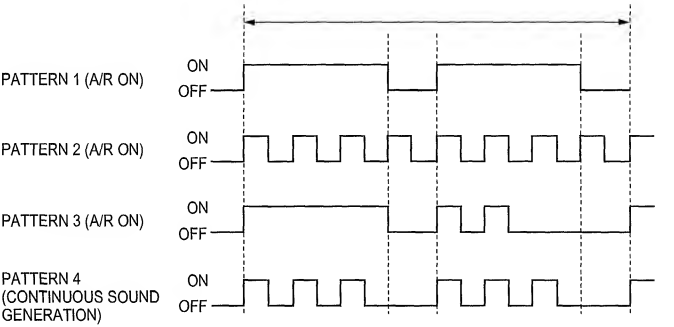


FIG.10

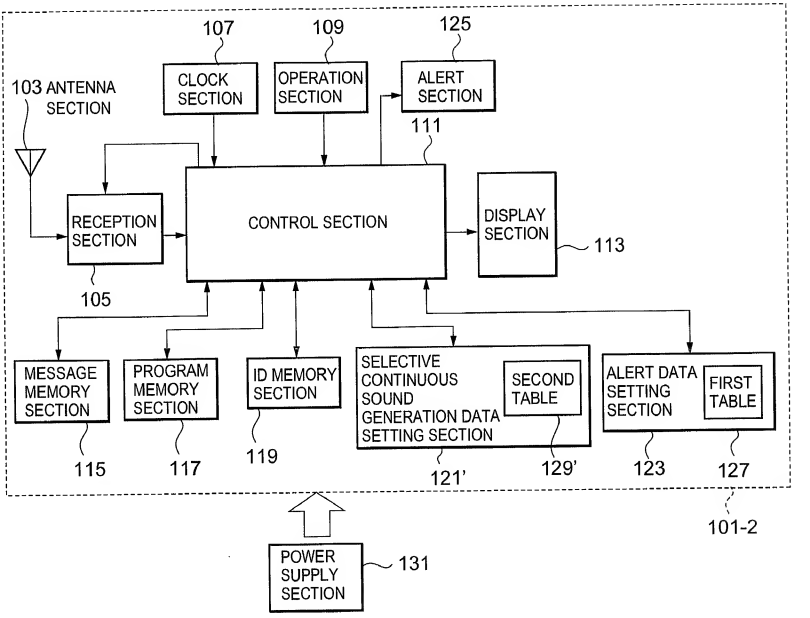

107
109
125
103 ANTENNA SECTION
CLOCK SECTION
OPERATION SECTION
ALERT SECTION
111
RECEPTION SECTION
CONTROL SECTION
DISPLAY SECTION
113
105
MESSAGE MEMORY SECTION
PROGRAM MEMORY SECTION
ID MEMORY SECTION
SELECTIVE CONTINUOUS SOUND GENERATION DATA SETTING SECTION
SECOND TABLE
ALERT DATA SETTING SECTION
FIRST TABLE
115
117
119
121'
129'
123
127
101-2
POWER SUPPLY SECTION
131

FIG.11

SOUND FREQUENCY INFORMATION	SOUND VOLUME INFORMATION	
NON-USE: 1,330 Hz SINGLE USE: 2,660 Hz SINGLE NON-USE: 1,330 Hz AND 2,660 Hz MIX	USE: LARGE SOUND FREQUENCY INFORMATION NON-USE: SMALL	SOUND TYPE INFORMATION: BEEP SOUND PATTERN 4

FIG.12

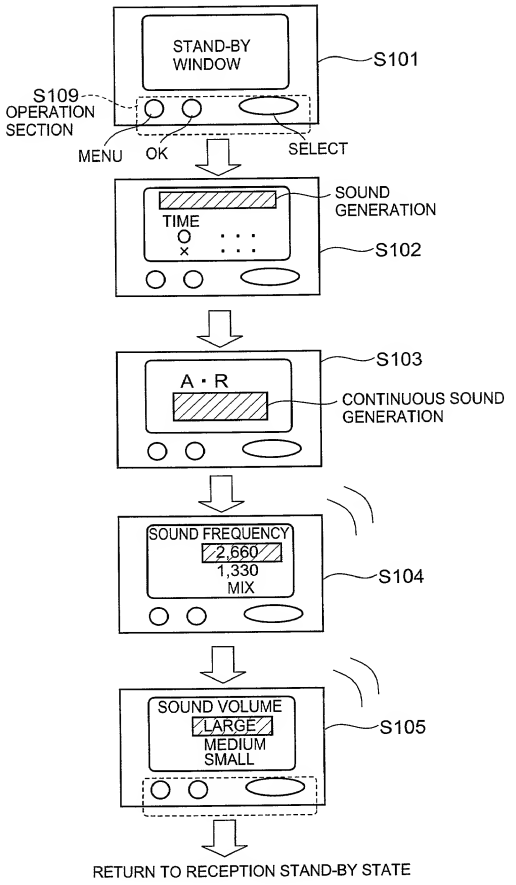
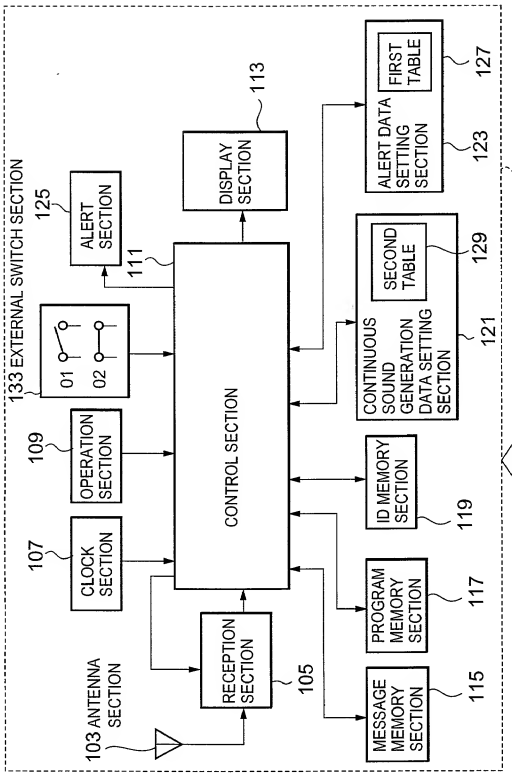

STAND-BY WINDOW
S101
S109
OPERATION SECTION
MENU
OK
SELECT
SOUND GENERATION
TIME
S102
S103
A・R
CONTINUOUS SOUND GENERATION
SOUND FREQUENCY
2,660
1,330
MIX
S104
SOUND VOLUME
LARGE
MEDIUM
SMALL
S105
RETURN TO RECEPTION STAND-BY STATE

FIG.13


103 ANTENNA SECTION
RECEPTION SECTION
105
CLOCK SECTION
107
OPERATION SECTION
109
133 EXTERNAL SWITCH SECTION
01
02
CONTROL SECTION
ALERT SECTION
125
111
DISPLAY SECTION
113
MESSAGE MEMORY SECTION
115
PROGRAM MEMORY SECTION
117
ID MEMORY SECTION
119
CONTINUOUS SOUND GENERATION DATA SETTING SECTION
121
SECOND TABLE
129
ALERT DATA SETTING SECTION
123
FIRST TABLE
127
101-3
POWER SUPPLY SECTION
131

Docket No.

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

SELECTIVE CALLING RECEIVER AND METHOD OF SWITCHING ALERT OPERATION THEREOF

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as United States Application No. or PCT International Application Number _____

and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
330978/1998 (Number)	Japan (Country)	20/11/1998 (Day/Month/Year Filed)	☐
(Number)	(Country)	(Day/Month/Year Filed)	☐
(Number)	(Country)	(Day/Month/Year Filed)	☐

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

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